Erosion and Sediment Control

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BE AN EVERYDAY CLEAN WATER HERO

SL1227170724HNL

Objectives

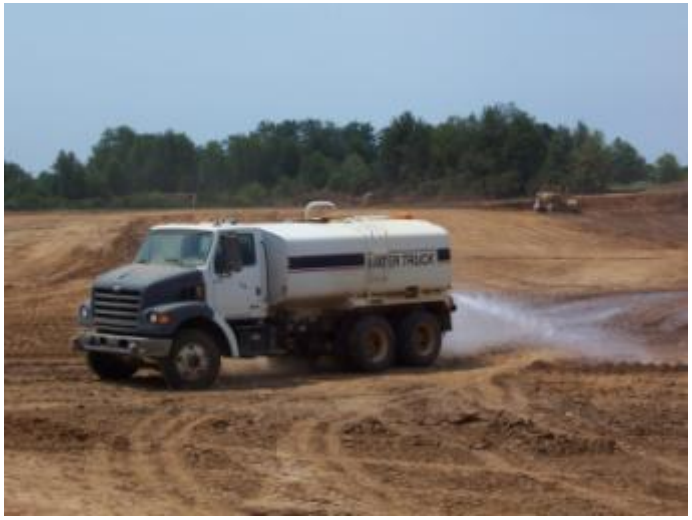
- Know the difference between erosion and sediment controls
- Recognize the different types of erosion and sediment controls
- Identify examples of good and bad sediment and erosion control applications

Installation Requirements

- Install your stormwater controls before you start clearing and grubbing work at the site.
- Follow manufacturers' specifications for proprietary products (e.g., erosion control blankets, turf reinforcement mats, soil binders, hydro-mulch, etc.)

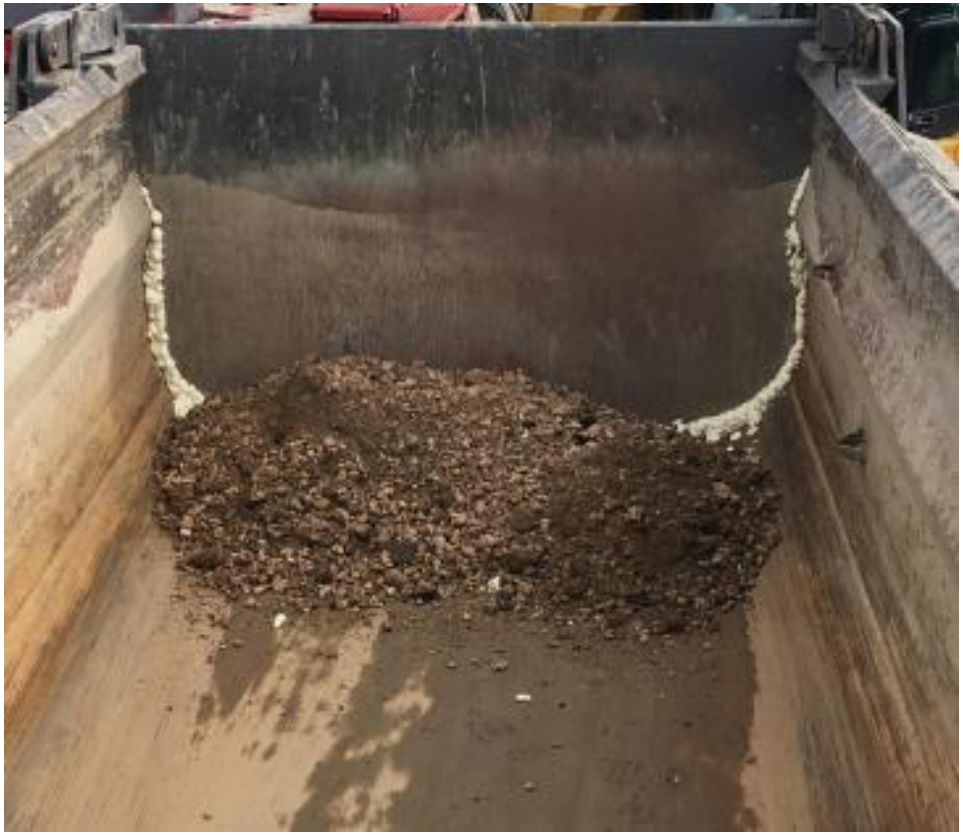
Construction Phasing

- Before work begins:
  - **Prepare SWPPP**
  - Whenever possible, schedule work to minimize areas of bare soil



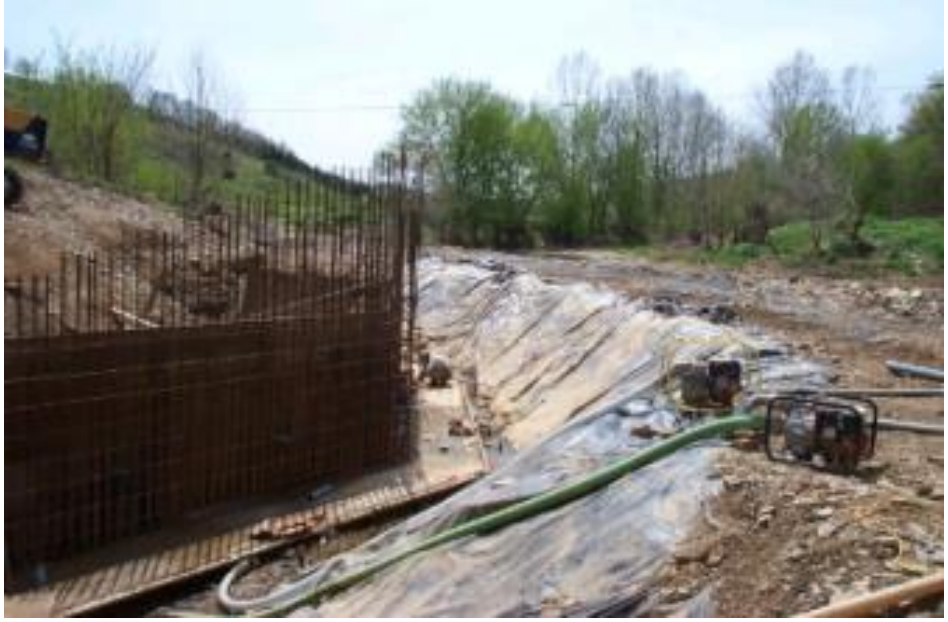
Coordination with MS4

- Ensure you know all the requirements of the MS4 you are working in
  - DOH requirements



Maintenance Requirements

- Operate and maintain your controls to prevent erosion and sediment runoff from the site
- Repair your controls immediately after discovering the problem (by the end of the work day for minor problems, and within 7 days for major issues or new BMPs)

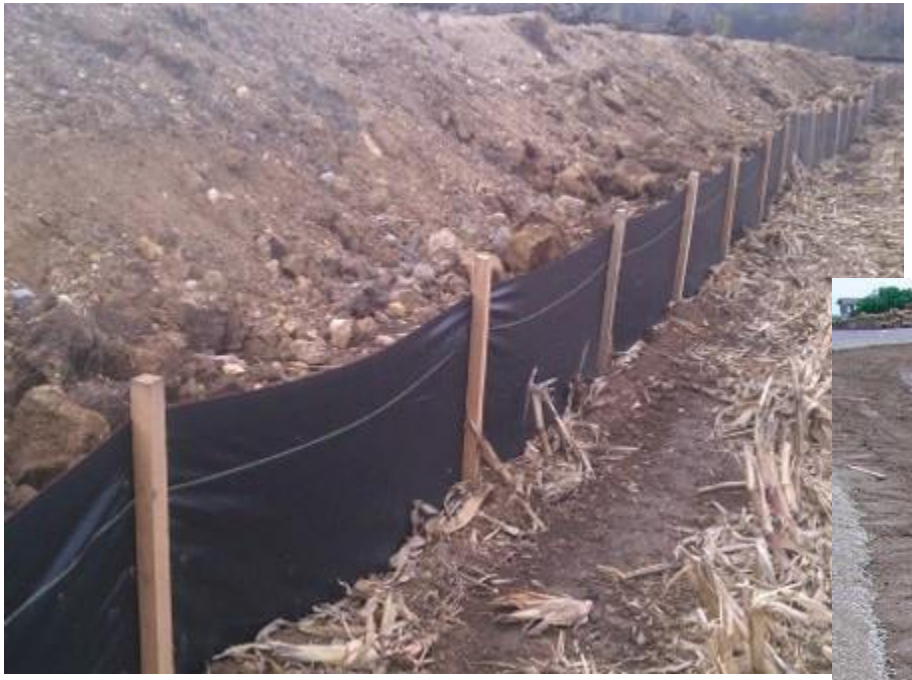


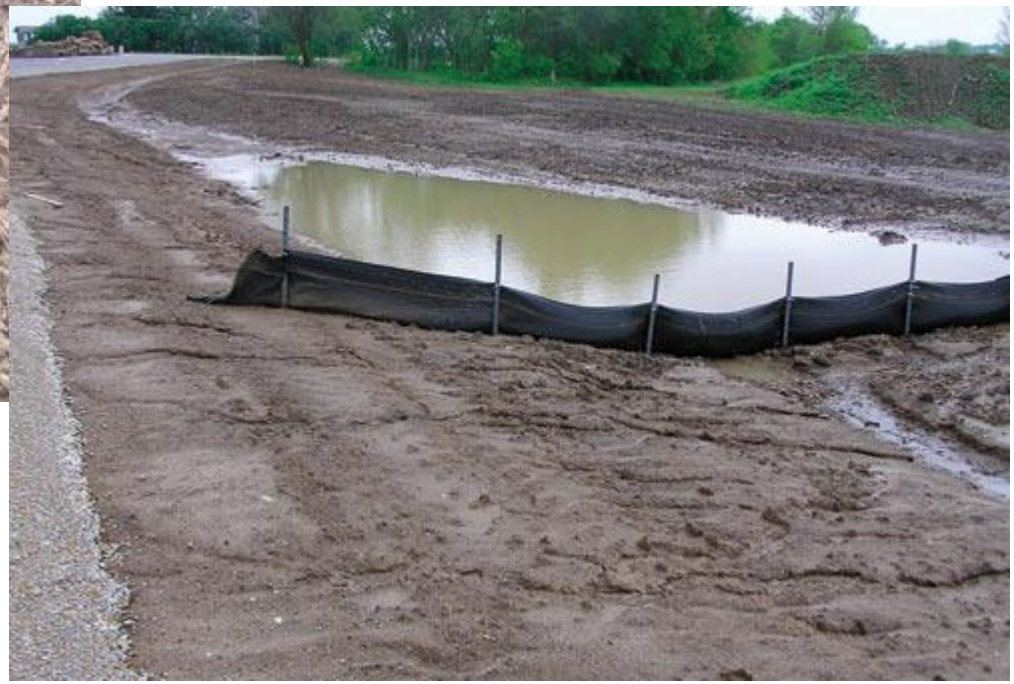
Perimeter Controls

- Install sediment controls (e.g., silt fence, sediment barrier) along the site perimeter that receives runoff from disturbed areas
- Remove sediment once it reaches __?__ above ground height behind silt fence or sediment barrier

Silt Fences

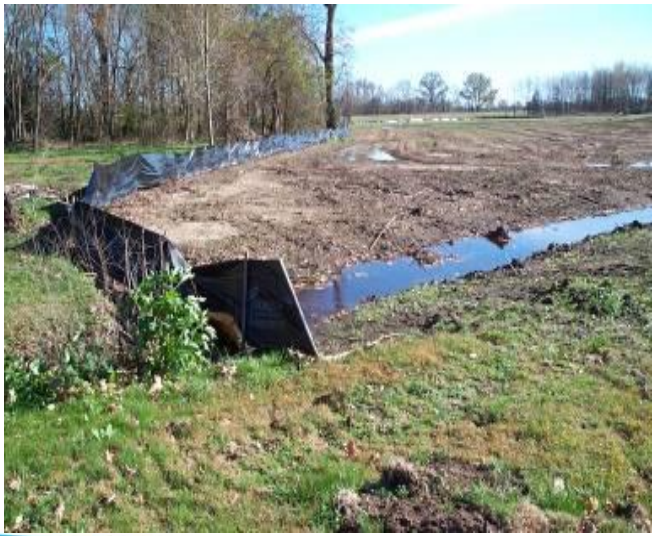
- Greatly misunderstood, frequently abused

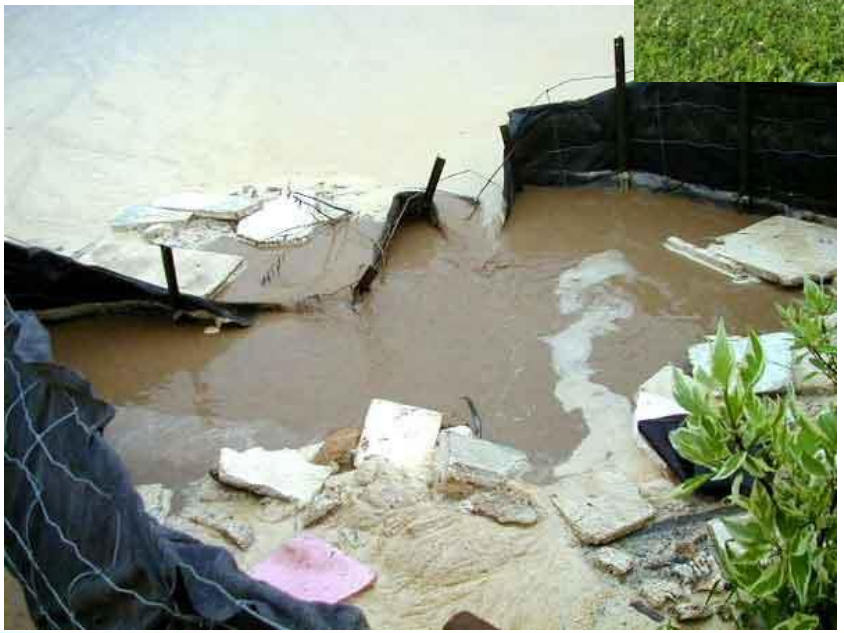




Poor Silt Fence Locations

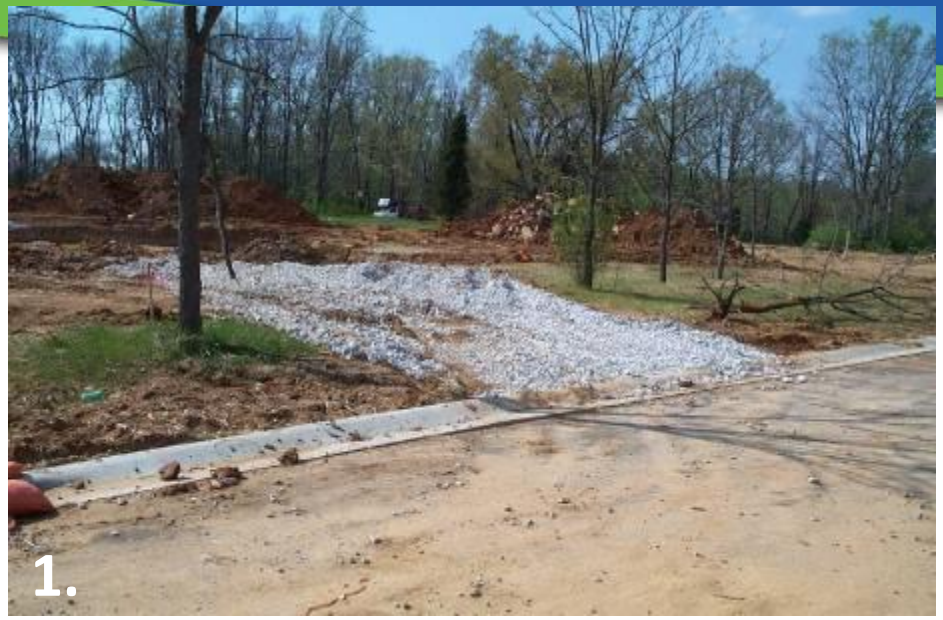
- Up and down slopes
- In drainage channels
- In creeks or streams





Minimize Sediment Track-Out

- Restrict designated entrance/exit points
- Install rock exit pad with geotextile under-liner
- Install a grizzly/rattle plate in combo with rock trackout
- Add a wheel washer if necessary to keep exits clear of track-out mud
- Remove sediment from paved roads by the end of each day (or more frequently if permits require)
- Do not hose or sweep sediment into storm drains or ditches!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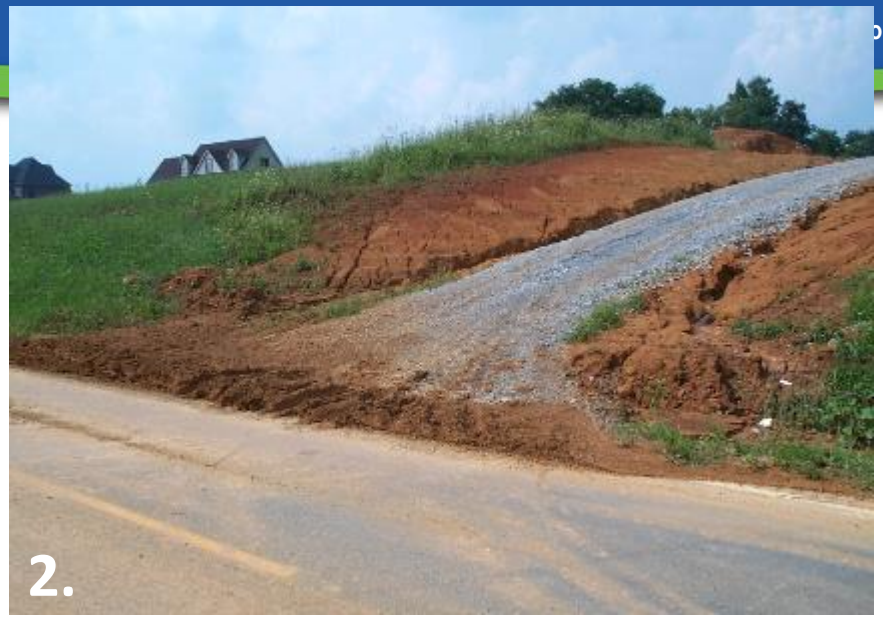
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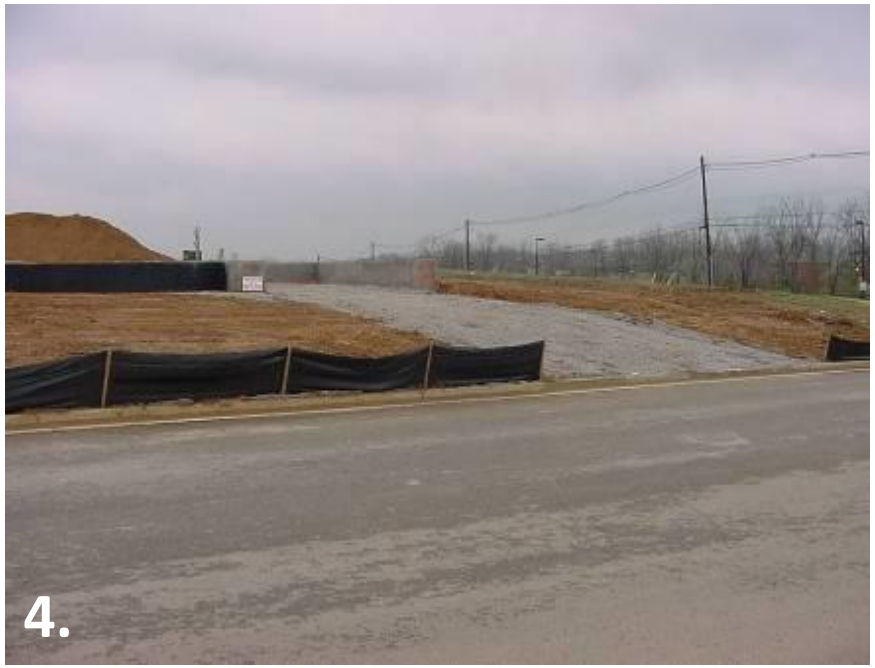
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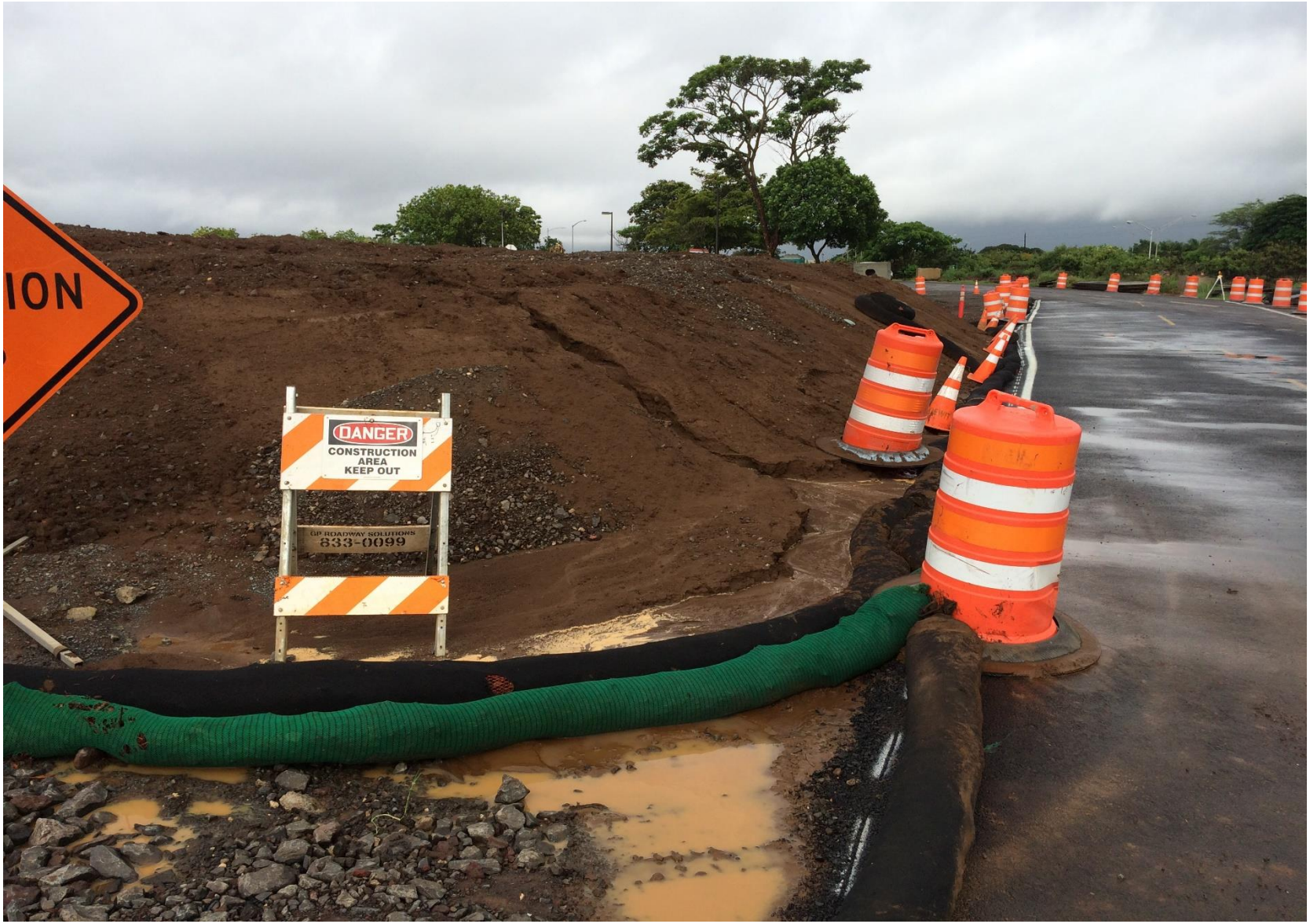
Preserve Topsoil

- Preserve native topsoil whenever feasible
  - Use on site to ensure good vegetative cover
  - Stockpile topsoil during initial grading/excavation
- Minimize soil compaction
  - Where final vegetative stabilization has occurred, restrict vehicle and equipment use
  - In areas to be vegetated, use soil conditioning techniques that will support vegetated growth.

Control Discharges From Stockpiles

- Locate temporary soil stockpiles outside of surface water buffers and away from ditches and channels
- Protect from contact with stormwater, including from run-on, with silt fencing, fiber rolls, etc.
- If possible, provide cover or appropriate temporary stabilization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DANGER
CONSTRUCTION
AREA
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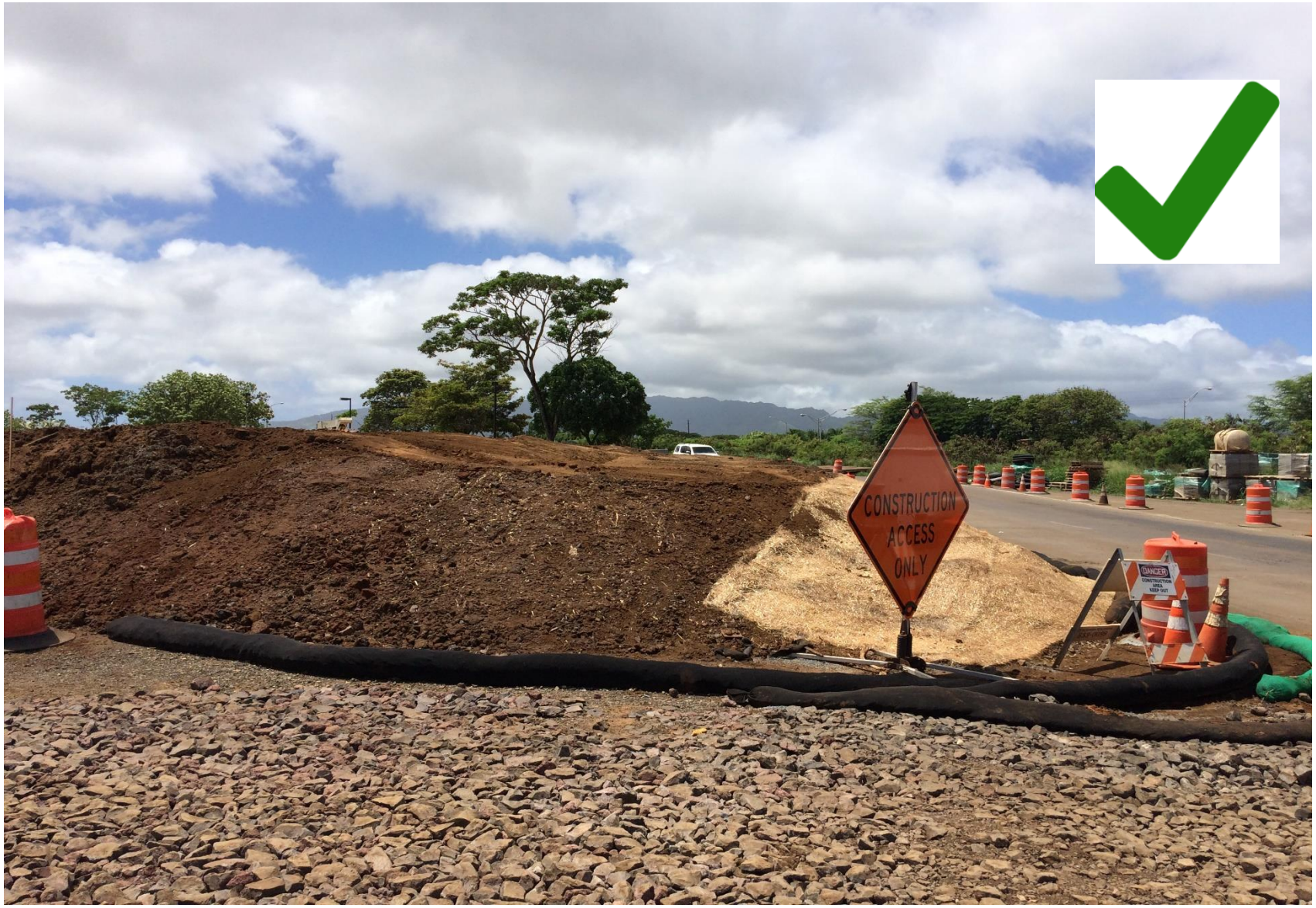
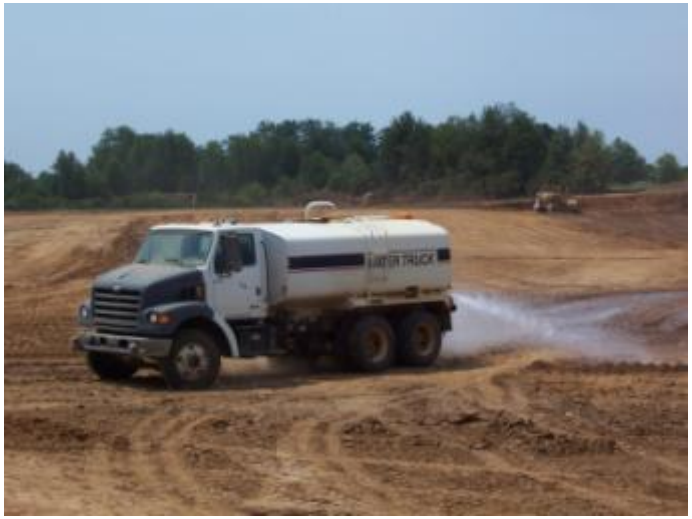
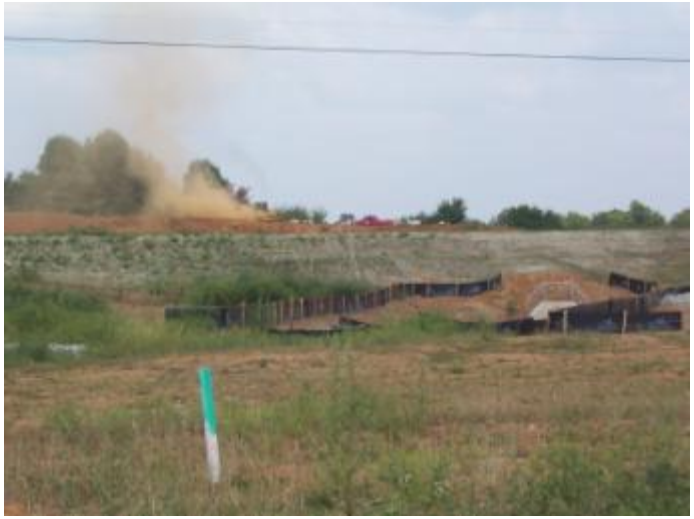

CONSTRUCTION
ACCESS
ONLY
DANGER

Minimize Dust

- Use water or other dust suppression techniques when needed
- For periods of long, hot, dry weather: consider soil binders
- Check manufacturer's claims and application requirements

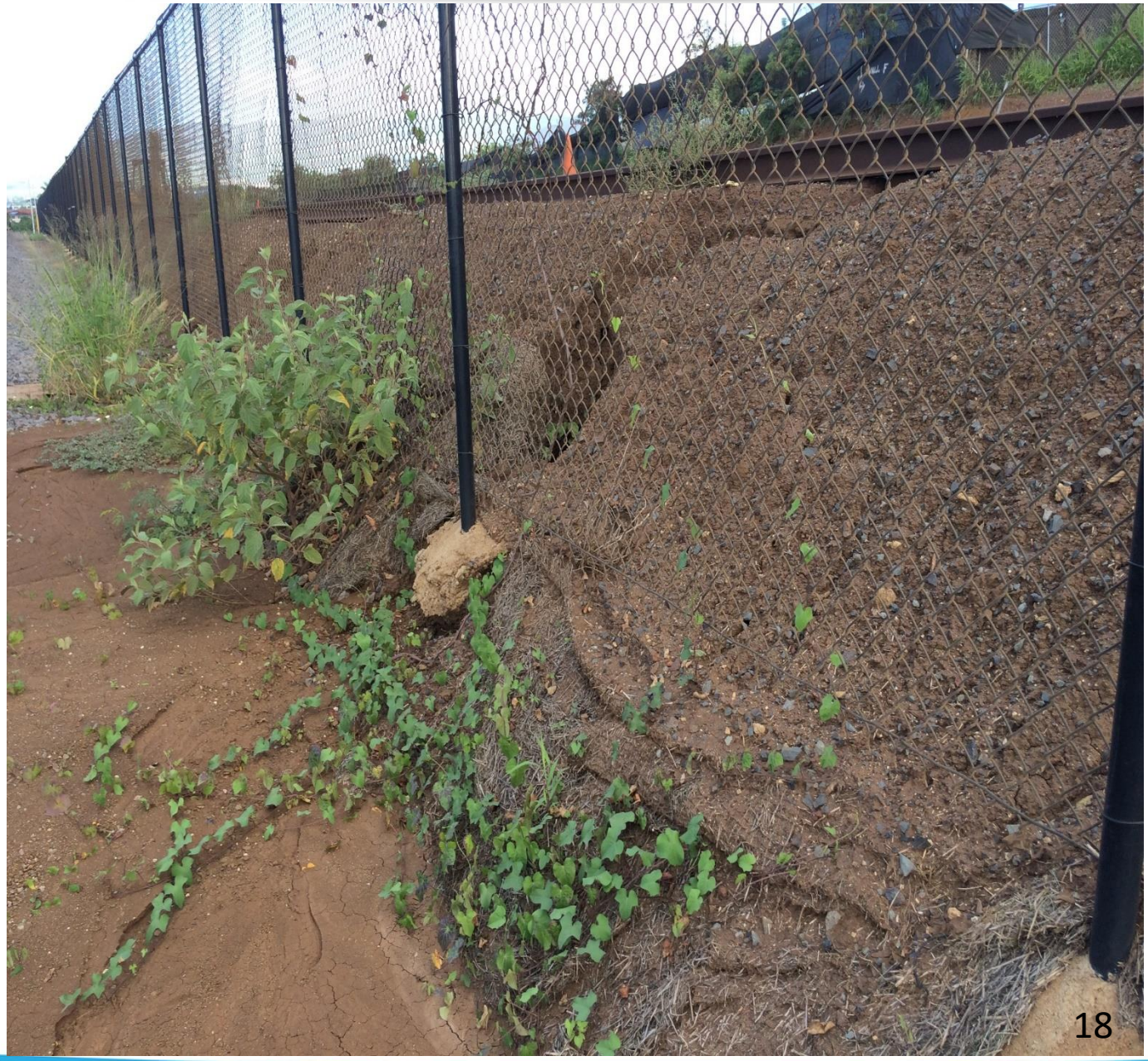


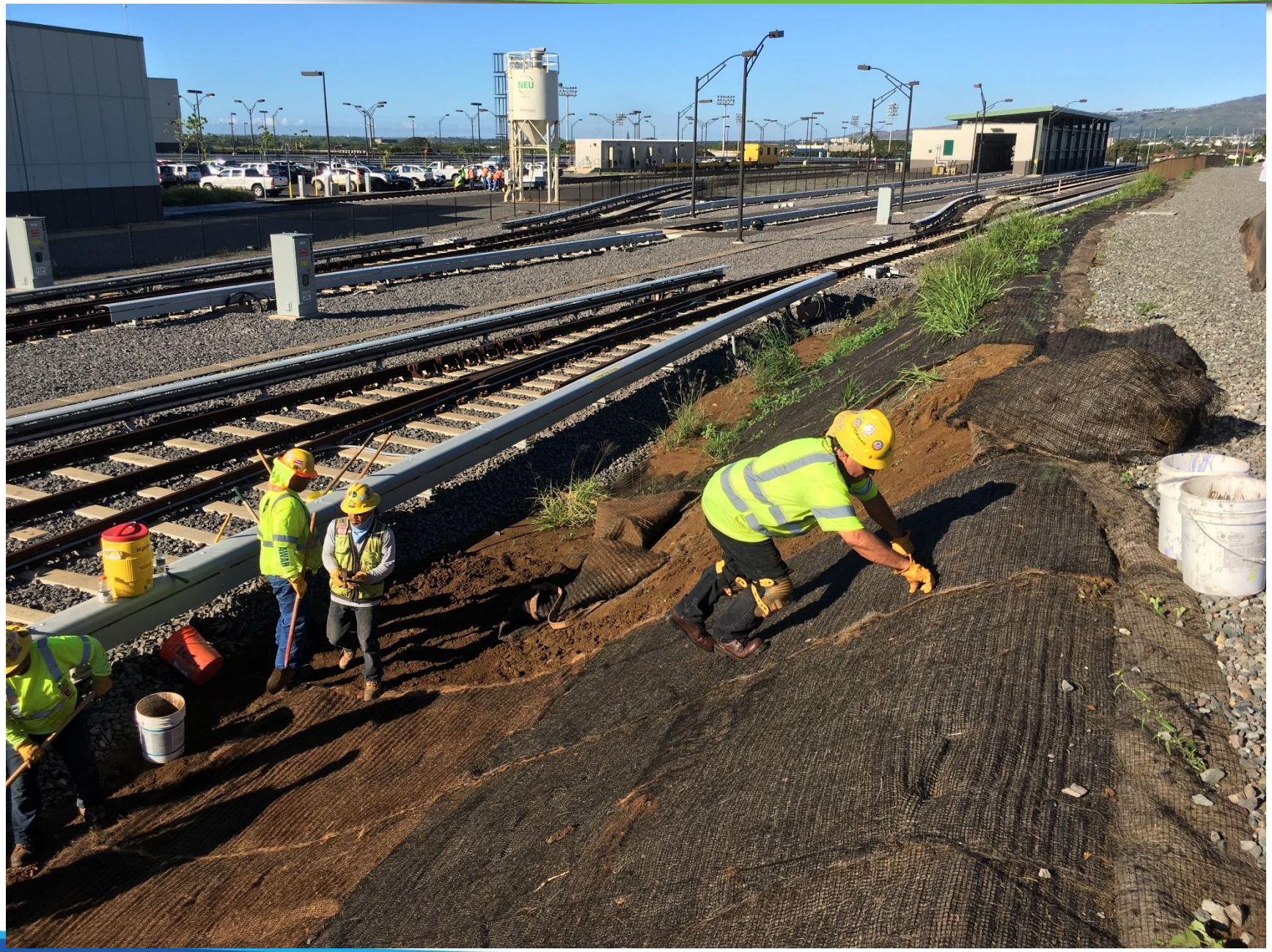


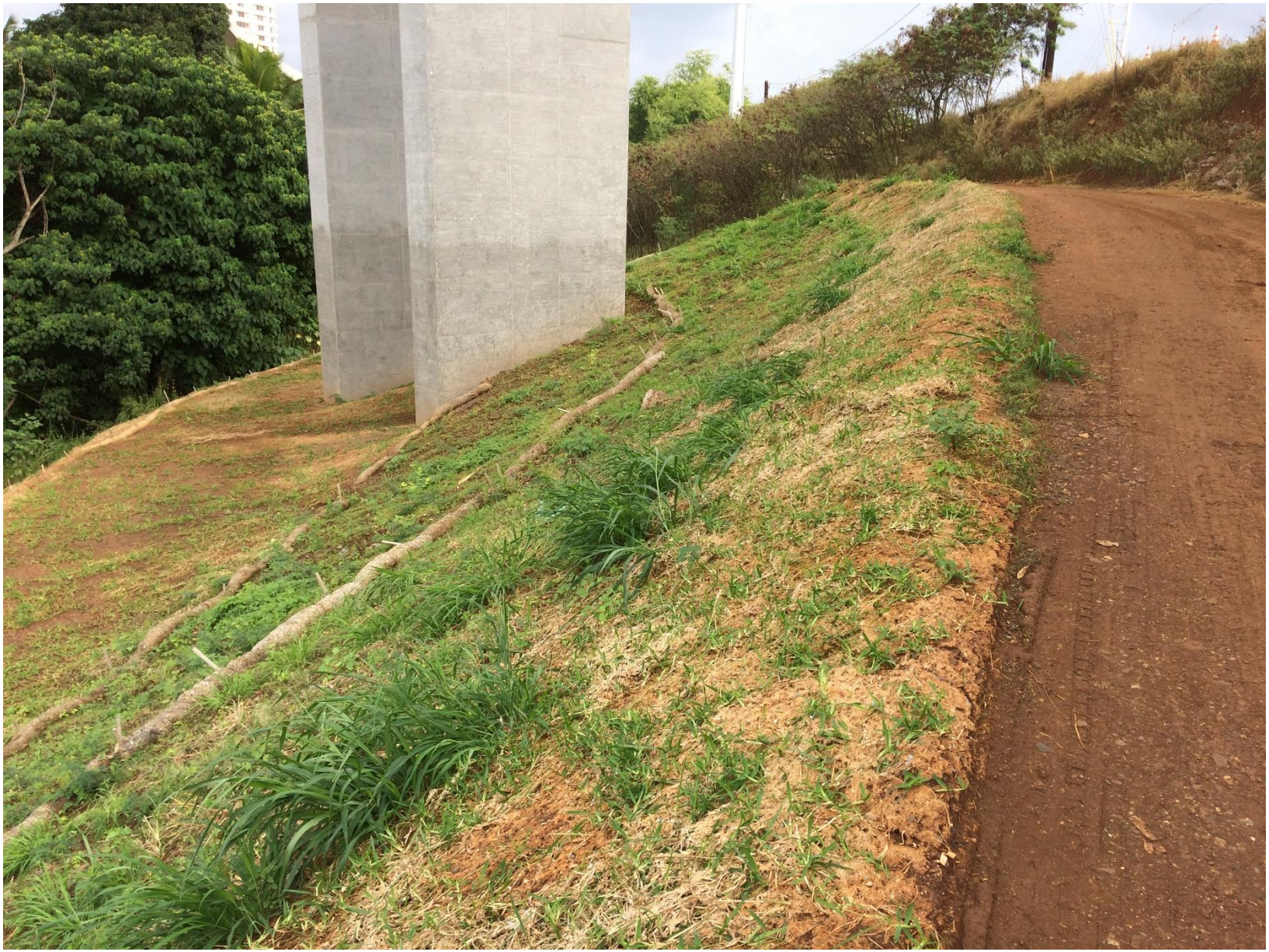
Blankets and Mats (Rolled Erosion Control Products)

- Excellent for slope and channel protection
- Use blankets for slopes flatter than 3:1 and ditches flatter than 20:1
- Use mats for slopes greater than 3:1 and ditches steeper than 20:1

- Blanket installation

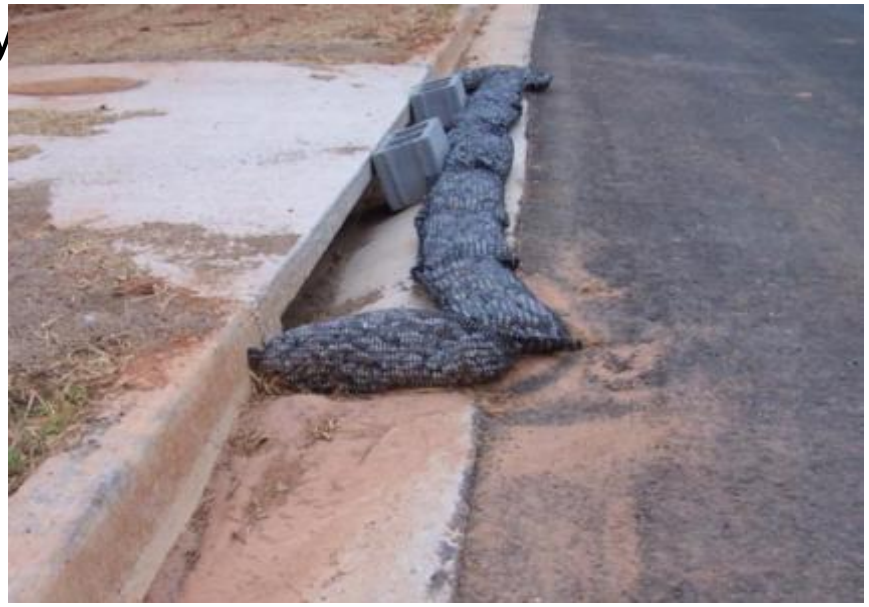






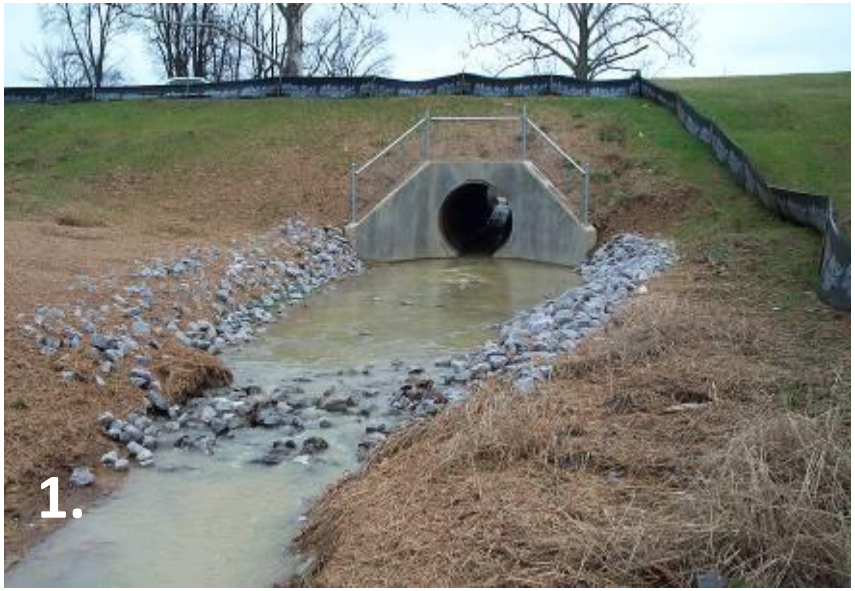
Protect Storm Drain Inlets

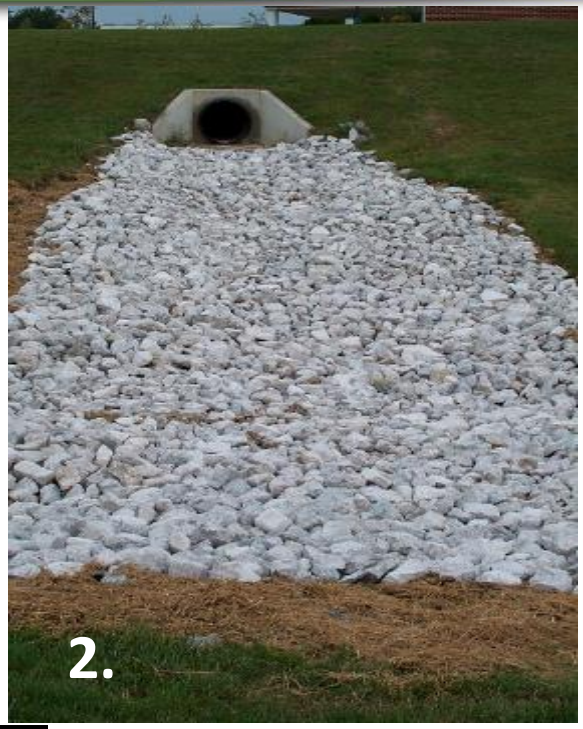
- Install inlet protection measures (e.g., rock berm collars, fabric filters, sand or rock bags)



What is wrong in these two pictures?

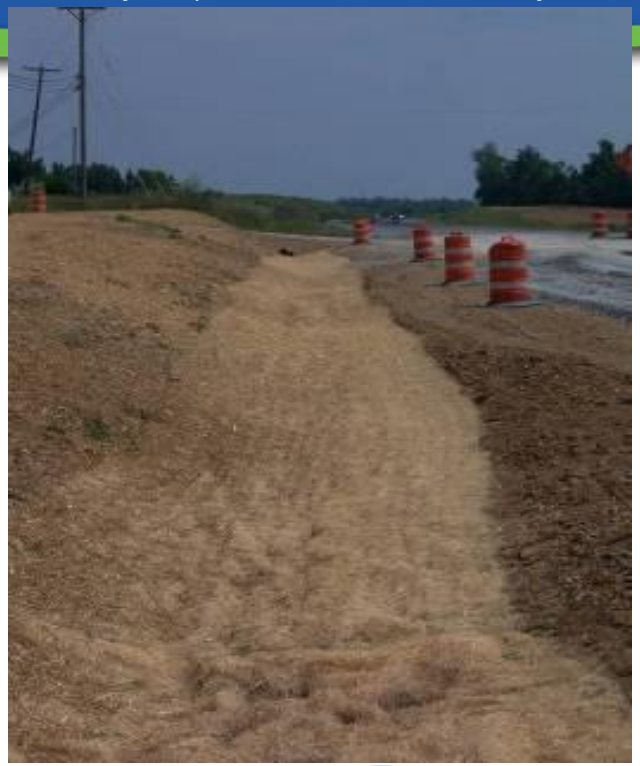
Outlet Protection





Ditch Liner Materials

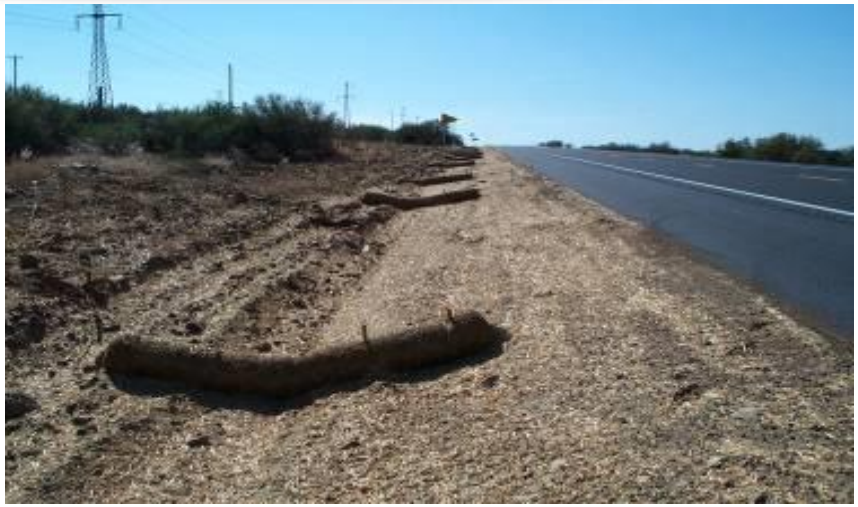
- Steep or high flow channels (> 20%)
  - Use concrete or riprap
- Moderately steep channels (~ 10%)
  - Use riprap or turf mats & seeding
- Slightly sloping channels (~5%)
  - Use turf mats or blankets & seeding
- Mostly flat channels (~2%)
  - Use seeding with blankets

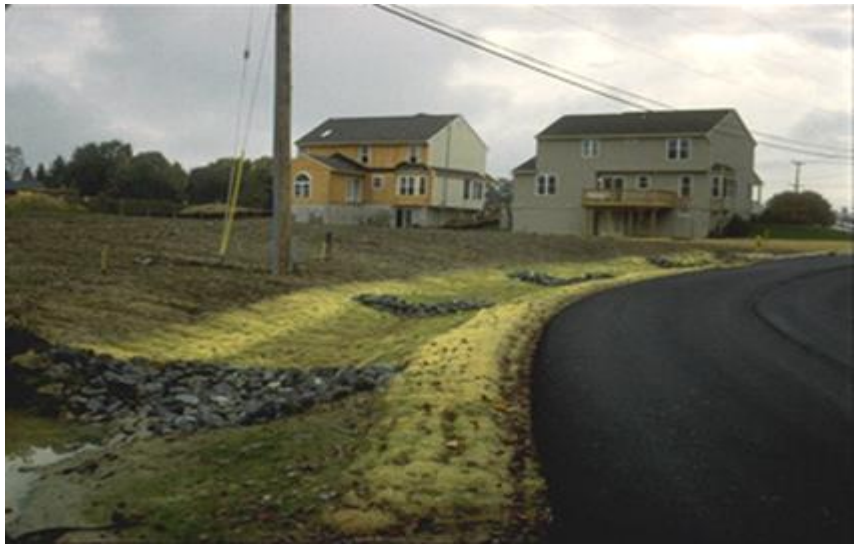


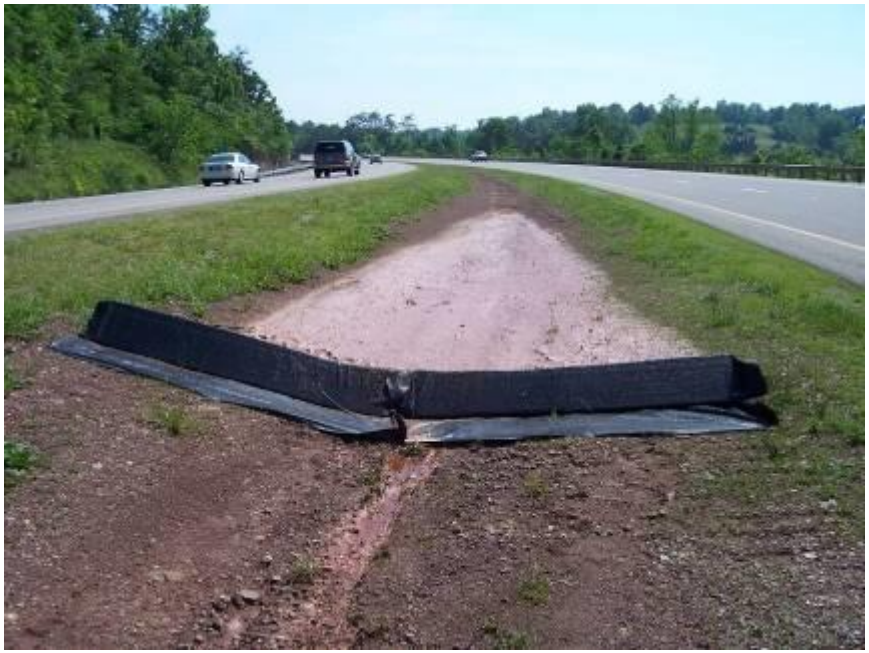
Seed ditches immediately after construction ***Triple the seeding rate***

Ditch Check Dams

- Constructed in channels to reduce runoff velocity and trap sediment
- Bottom of upper silt check is at the same elevation as the top of downstream check

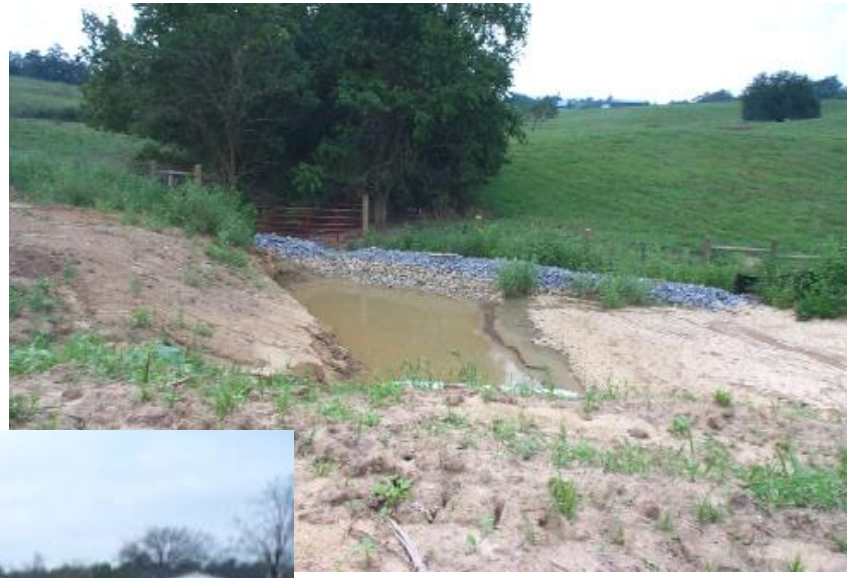


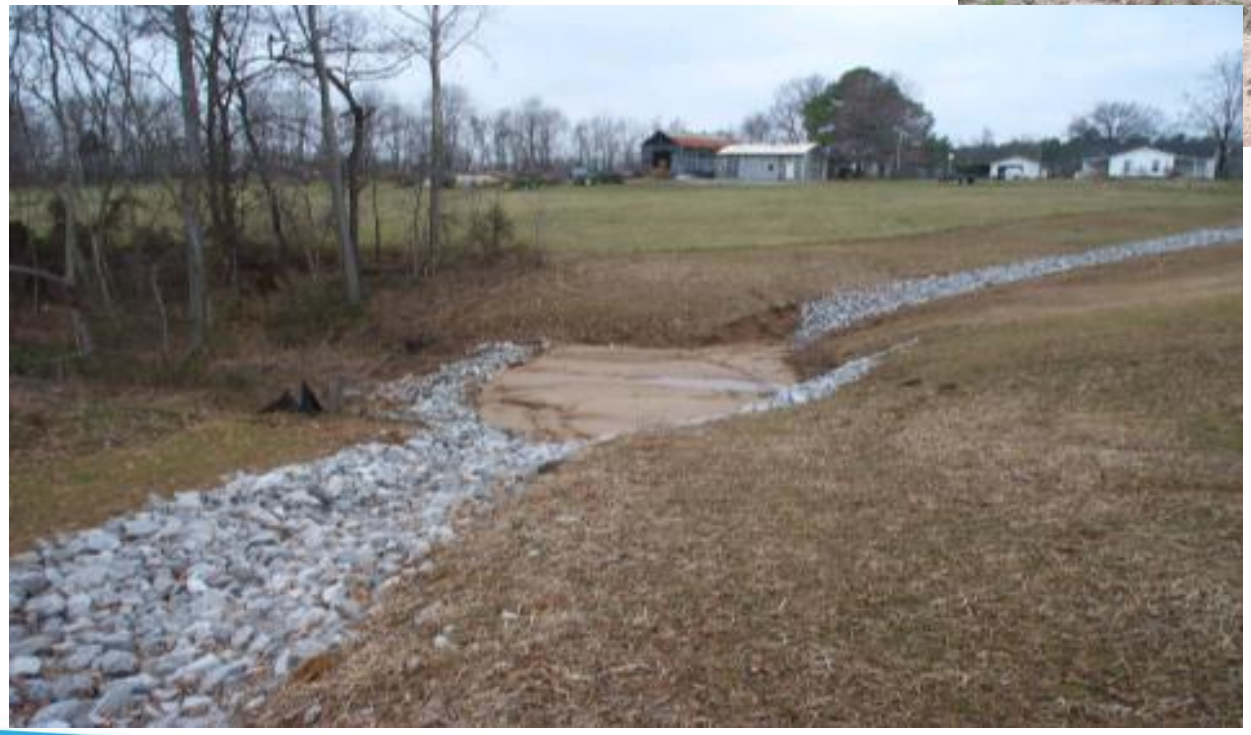




Sediment Traps and Basins

- Designed & placed to pool runoff so sediment can settle out
- Installed before grading/fill work begins!





Dewatering Practices

- Direct water removed from excavations and trenches to sediment controls
- Sediment controls include sediment basins, bag filters, or other sediment removal device
- Follow manufacturer's specifications

2 BMP minimum for dewatering